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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,135	11/01/2005	Katsuhiko Takushima	125509	4295
25944	7590	06/13/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER EL ARINI, ZEINAB	
			ART UNIT 1746	PAPER NUMBER

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Applicati n No.

10/551,135

Applicant(s)

TAKUSHIMA, KATSUHIRO

Examiner

Zeinab E. EL-Arini

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/01/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1-4, 11-14, and 23-25, 28, "a desired force" is indefinite term.

In claim 1, line 3, "the surface" lacks antecedent basis.

Claims 3 and 13 are indefinite and cannot be understood.

In claims 5, and 18, line 2, "predetermined" is indefinite term. At line 1, "to of claims" is indefinite and confusing term.

In claims 7-9, line 1, "claims 1" is confusing term. It should be changed to read "claim 1".

In claim 11, line 2, "the surface", and at line 3, "the state" are all without proper antecedent basis.

In claim 15, line 1, "the particle" and at line 2, "the object" are without proper antecedent basis. At line 7, "the substrate" lacks antecedent basis. Claim 15 is incomplete, because positive step for removing particle has not been recited.

In claim 18, line 2, "the zeta" lacks antecedent basis.

Claim 28 is confusing and incomplete in the recitation of "means for adding" without reciting the subject matter to be added.

In claim 31, line 1, "the solvent", and in claim 32, line 1, "the pH" are without proper antecedent basis.

4. Claims 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps of removing particle.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-7, 11-19, and 23-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Harano et al. (US 2001/0037818).

7. Harano et al. disclose a method of removing a particle from a substrate comprising moving a liquid having high viscosity over the substrate surface, during the movement of the liquid the particles become entrapped in or attached to the liquid, resulting to the particles being removed from the surface of the substrate. The reference discloses generating the force as claimed. The reference discloses moving the substrate as claimed. The pH and the viscosity are inherent in the Harano et al. liquid. See paragraphs 87, 96, and Figs. 4, 8, and 10-11.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8-10, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harano et al. in combination with JP 02-099175 (JP'175).

Harano et al. as discussed supra teach all limitation with the exception of the object has a patterned structure on the surface, the object is a photomask, and the pattern having undercut shape on the surface as claimed.

JP'175 discloses a method of cleaning a substrate with a washing liquid having a high viscosity. The reference discloses the photomask and the structure as claimed. See the abstract.

It would have been obvious for one skilled in the art to use the process taught by Harano et al. for cleaning the photomask and substrate having pattern structure on the surface of said substrate taught by JP'175, because both references are from the same technical endeavor, which is removing particles from an object by using liquid having high viscosity.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshioka et al. (6,149,727) disclose substrate processing

apparatus. Kohama et al. (6,536,452) disclose processing apparatus and processing method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Zeinab E. EL-Arini*  
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Primary Examiner  
Art Unit 1746

ZEE  
06/02/06